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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,993	05/03/2001	Junichi Aizawa	L9289.01134	7164

7590 06/15/2004

Stevens Davis Miller & Mosher
1615 L Street N W Suite 850
Washington, DC 20036

EXAMINER

PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 06/15/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/830,993

Applicant(s)

AIZAWA ET AL.

Examiner

Angelica M. Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

2. Applicant's arguments with respect to claim 13-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (Smith et al., US Patent No.: 6,006,075) in view of Kamerman (Kamerman et al.; US Patent No.: 5,164,942 A).

Regarding claims 13 and 18, Smith teaches of a base station apparatus (column 4 lines 48-52) and control method (column 1, lines 6-9) comprising: a plurality of antennas (figure 1, items 26) that transmit a plurality of differing transmission data to a plurality of mobile station apparatuses (column 4, lines 48-63); a storage section (figure 1, item 46) that stores a switching pattern that defines relationships between the plurality of antennas and the plurality of transmission data at predetermined times (column 10, lines 57-67); and a switching section the uses the switching pattern in repetition and switches around the plurality of transmission data between the plurality of antennas(column 11, lines 55-67 and column 12, lines 1-9; where there is repetition in the switching pattern).

Smith does not teach where the switching section makes a repeating period of the switching pattern equal to the time interleaving length in the transmission data.

In related art concerning antenna control for a LAN station, Kamerman teaches where the switching section makes a repeating period of the switching pattern equal to the time interleaving length in the transmission data (column 1, lines 45-50 and lines 42-48; where a counter makes the spacing equal and synchronizes transmission; also, the time intervals of the counter can be configured according to the switching pattern operations).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Smith's base station with Kamerman's counter in order to achieve a synchronized switching pattern, which enhances the synchronization of transmission and prevents fading.

Regarding claims 14, Smith teaches all the limitations according to claim 13. Smith further teaches where the storage section stores the switching pattern for performing the switching operation between antennas having low correlation with each other (column 10, lines 57-67; where there is a low correlation among antennas transmitting signals at different frequencies).

Regarding claims 15, Smith teaches all the limitations according to claim 13. Smith further teaches of the base station comprising: a converter that converts frequencies of the plurality of transmission data items to respective frequencies different from each other, thereby performing frequency conversion (column 6, lines 57-62; where the "tuning" refers to "converting" the frequency), where the switch section performs the switching operation on the plurality of transmission data items subjected to the frequency conversion in the converter (column 11, lines 39-48).

Regarding claims 16, Smith teaches all the limitations according to claim 13. Smith further teaches of the base station comprising: a converter that converts frequencies of the plurality of transmission data items to respective frequencies different from each other, thereby performing frequency conversion (column 6, lines 57-62; where the "tuning" refers to "converting" the frequency), where the switch section performs the switching operation on the plurality of transmission data items subjected to the frequency conversion in the converter (column 11, lines 39-48).

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Kamerman and in further view of Fujita (Fujita, Noriyuki; US Patent No.: 6,128,476).

Regarding claims 17, Smith in view of Kamerman teaches all the limitations according to claim 13.

Smith in view of Kamerman does not teach where the converter has a plurality of synthesizers for each antenna, and switches a conversion frequency of a synthesizer while another synthesizer is performing the frequency conversion on transmission data.

Fujita, in related art concerning Transmission of diversity circuits for TDMA radio unit, teaches of a plurality of synthesizers for each antenna, and switches a conversion frequency of a synthesizer while another synthesizer is

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performing the frequency conversion on transmission data (columns 2 and 3, lines 66-67 and 1-8, respectively).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Smith's and Kamerman's apparatus with Fujita's plurality of synthesizers in order to be able to obtain better signals.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Patent No.: 6,317,411 B1, refers to transmitting and receiving signals from antenna arrays.

Patent No.: 5,787,122, refers to a method and apparatus for transmitting receiving, encoded data burst signals using a number of antennas.

Patent No.: 6,243,563 B1, deals with a wireless device for high power transmission radio signal.

Patent No.: 6,609,010 B1, refers to a dual frequency band transceiver.


Any inquiry concerning this communication or earlier communications from the

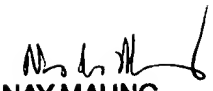
examiner should be directed to Angelica Perez whose telephone number is 703-305-8724. The examiner can normally be reached on 7:15 a.m. - 3:55 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

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Angelica Perez
(Examiner)


NAY MAUNG
SUPERVISORY PATENT EXAMINER
Nay A. Maung
(SPE)

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June 2, 2004